UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON, D.C. 20242

November 12, 1968

Mr. B. K. Jones
1714 S. Beverly Glen Blvd.
Los Angeles, California 90024

Dear Mr. Jones:

This responds to your recent request addressed to Dr. Leopold and Mr. Langbein for information about the water requirements of a hotel and for irrigation of a golf course.

Copies of pages 16 and 17 of "Manual of Individual Water Supply Systems," Public Health Service Publication No. 24, are enclosed. These pages show average amounts of water used for various purposes, including the operation of a hotel. The actual amounts of water used may range widely but these figures are reasonable for planning. We have no information on the use of water for irrigation of golf courses in particular. However, a report published by the U.S. Department of Agriculture, "Determining Consumptive Use and Irrigation Water Requirements," Technical Bulletin 1275, covers lawns and pastures. This report is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 for 25 cents.

Two general reports on the use of water in industry are:

1. Water in Industry, published by the National Association of Manufacturers, 277 Park Avenue, New York, N.Y. 10017 and the Chamber of Commerce of the U.S., 1615 H Street N.W. Washington, D.C. 20006, ($2.00).

2. 1963 Census of Manufacturers, Water Use in Manufacturing, U.S. Bureau of the Census, Report MC 63(1)-10, available from the Superintendent of Documents for $1.00.

A list of reports on water use in selected industries is enclosed. Some of these reports are still in print and are available from the Superintendent of Documents.

Sincerely yours,

J B Walling

for S. M. Lang
Chief, Reports Section
Water Resources Division

Enclosures

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value in combating incipient fires or in wetting down adjacent buildings, it cannot be expected to be effective on a fire which has gained any headway. When such systems are already installed, connections and hose should be provided. When a new system is being planned or a replacement of equipment made, it is urged that a capacity of at least 500 gallons an hour (8⅓ gallons per minute) be specified and the supply increased to meet this demand. If necessary, storage should be added. The additional cost for the larger unit necessary for fire protection is partially offset by the increased quantities of water available for other uses.

Table 1.—*Planning guide for water use*

Types of establishments	Gallons per day
Airports (per passenger)	3–5
Apartments, multiple family (per resident)	60
Bath houses (per bather)	10
Camps:	
Construction, semipermanent (per worker)	50
Day with no meals served (per camper)	15
Luxury (per camper)	100–150
Resorts, day and night, with limited plumbing (per camper)	50
Tourist with central bath and toilet facilities (per person)	35
Cottages with seasonal occupancy (per resident)	50
Courts, tourist with individual bath units (per person)	50
Clubs:	
Country (per resident member)	100
Country (per nonresident member present)	25
Dwellings:	
Boarding houses (per boarder)	50
Additional kitchen requirements for nonresident boarders	10
Luxury (per person)	100–150
Multiple family apartments (per resident)	40
Rooming houses (per resident)	60
Single family (per resident)	50–75
Estates (per resident)	100–150
Factories (gallons per person per shift)	15–35
Hotels with private baths (two persons per room)	60
Hotels without private baths (per person)	50
Institutions other than hospitals (per person)	75–125
Hospitals (per bed)	250–400
Laundries, self-serviced (gallons per washing, i.e., per customer)	50
Livestock (per animal):	
Cattle (drinking)	12
Dairy (drinking and servicing)	35
Goat (drinking)	2
Hog (drinking)	4
Horse (drinking)	12
Mule (drinking)	12
Sheep (drinking)	2
Steer (drinking)	12

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…ns are already installed, connec-
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…(8⅓ gallons per minute) be speci-
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…ally offset by the increased quan-
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…ide for water use

…nents	Gallons per day
	3–5
	60
	10
…ker)	50
)	15
	100–150
…umbing (per camper)	50
…ilities (per person)	35
…ent)	50
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…r nonresident boarders	10
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…t)	40
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	100–150
	15–35
…oom)	60
	50
	75–125
	250–400
…i.e., per customer)	50
	12
	35
	2
	4
	12
	12
	2
	12

Types of establishments	Gallons per day
Motels with bath, toilet, and kitchen facilities (per bed space)	50
With bed and toilet (per bed space)	40
Parks:	
Overnight with flush toilets (per camper)	25
Trailers with individual bath units (per camper)	50
Picnic:	
With bath houses, showers, and flush toilets (per picnicker)	20
With toilet facilities only (gal. per picnicker)	10
Poultry:	
Chickens (per 100)	5–10
Turkeys (per 100)	10–18
Restaurants with toilet facilities (per patron)	7–10
Without toilet facilities (per patron)	2½–3
With bars and cocktail lounge (additional quantity per patron)	2
Schools:	
Boarding (per pupil)	75–100
Day with cafeteria, gymnasiums, and showers (per pupil)	25
Day with cafeteria but no gymnasiums or showers (per pupil)	20
Day without cafeteria, gymnasiums, or showers (per pupil)	15
Service Stations (per vehicle)	10
Stores (per toilet room)	400
Swimming pools (per swimmer)	10
Theaters:	
Drive-in (per car space)	5
Movie (per auditorium seat)	5
Workers:	
Construction (per person per shift)	50
Day (school or offices per person per shift)	15

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REPORTS ON WATER REQUIREMENTS OF SELECTED INDUSTRIES

Water-Supply Paper 1330-A, Water requirements of the pulp and paper industry, by O. D. Mussey. 1955, p. 1-71, 45 cents.

Water-Supply Paper 1330-B, Water requirements of the carbon-black industry, by H. L. Conklin. 1956, p. 73-101, 20 cents.

Water-Supply Paper 1330-C, Water requirements of the Aluminum industry, by H. L. Conklin. 1956, p. 103-139.

Water-Supply Paper 1330-D, Water requirements of the rayon-and acetate-fiber industry, by O. D. Mussey. 1957, p. 141-179, 20 cents.

Water-Supply Paper 1330-E, Water requirements of the copper industry, by O. D. Mussey. 1961, p. 181-219, 45 cents.

Water-Supply Paper 1330-F, Water requirements of the styrene, butadiene, and synthetic-rubber industries, by C. N. Durfor. 1963, p. 221-285, 30 cents.

Water-Supply Paper 1330-G, Water requirements of the petroleum refining industry, by L. E. Otts. 1963, p. 287-339, 60 cents.

Water-Supply Paper 1330-H, Water requirements of the iron and steel industry, by F. B. Walling and L. E. Otts. 1967, p. 341-394, 65 cents.

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A STUDY OF RESIDENTIAL WATER USE

A Report Prepared
for the
Technical Studies Program
of the
Federal Housing Administration
Department of Housing and Urban Development

by
F. P. Linaweaver, Jr.
John C. Geyer
Jerome B. Wolff

Department of Environmental Engineering Science
The Johns Hopkins University
Baltimore, Maryland

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price 55 cents

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